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John Logie Baird

Dear Sir—I have read Capt. P. P. Eckersley's assessment of 'The achievement and failure of John Logie Baird' in the April 1962 *Journal*, p. 197, with especial interest, because I had the privilege to work under Baird as a personal technical assistant from early 1932 until late 1938. Within this period, I was in contact with him practically every working day, excepting only interruptions on account of holidays and his journeyings abroad. I quite often worked late in the laboratory alongside his house at Sydenham that was my place of employment, and on these occasions Baird almost invariably asked me to join Mrs. Baird, himself and any other guests he might be entertaining for dinner.

Of course, the view of a complex individual leading a complex life that a very junior subordinate can form, even given my particularly favourable opportunities, cannot be more than one aspect of the whole. Likewise, with all due deference, I suggest that the impressions and opinions that Capt. Eckersley now records are also no more than a part of the whole, derived perhaps in large measure from his past official dealings in his British Broadcasting Corporation capacity with Baird in his capacity as managing director. Recollections of such contacts with Baird are indubitably of relevance and value, but I think it will be agreed that they are also likely to have been subject to severe limitations. A chess player does not disclose more of his thought to an opponent than is implicit in the immediate move he makes. I concur with much that Capt. Eckersley has to say but feel that the picture of Baird, the man, likely to be conveyed to persons not otherwise informed is too unevenly illuminated to let pass into acceptance without some attempt to redress the balance.

It is my humble opinion that Baird was a very fine man indeed, well versed in the humanities (Robbie Burns included), sensitive, understanding and of high integrity. He was never in any position to select those that jumped on his bandwagon, and, if it carried at times some elements of charlatanism, as might be inferred from Capt. Eckersley's article, there was in my view no vestige of any such element in the make-up of Baird himself. He was not unappreciative of the fundamental needs that Capt. Eckersley so rightly postulates, nor were his early staff so deficient in the techniques of disciplined development as might be supposed, as can be checked, I think, by reference to the late J. C. Wilson's pioneer textbook of 1937.

Baird struggled manfully to cobble together the contradictions of requirements and personalities by which his life was hemmed in, and in the resultant rat-race he never attained sufficient freedom from current pressures to put in hand the things necessary for long-term development.

In the tradition of Little Tommy Tucker, Baird had to show pictures for his supper, and, lacking the resources to develop all-electronic ones in the limited time during which he was in effective command of affairs, he was compelled to use the relatively simple and inexpensive mechanical means to hand.

If chronology is rechecked, it will, I think, be found that Bridgewater was already working with Robb in the 30-line television studio in the basement of Broadcasting House at the time Baird was virtually retired and the late Capt. A. G. D. West was appointed to conduct the 'rescue operation' to which Capt. Eckersley refers. I think it is unlikely therefore that Bridgewater could have been associated with this operation. I suspect also that if all the records of the past were available it might be found that Baird's share of responsibility for failure was rather less than has been commonly supposed.

I saw Baird last after my release from Japanese internment in November 1945, and I cannot say I noticed any trace of the bewilderment or whimper discerned by Capt. Eckersley. On the contrary, my impression was that he retained his characteristic good-humouredly cynical outlook and continued in defeat defiant.—Yours faithfully,

P. V. REVELEY

P.O. Box 350, Jesselton, North Borneo
11th June 1962

[Capt. Eckersley writes: Any assessment of a man's character and achievements must, in one sense or another, be biased, otherwise judgment lacks clarity. I cannot accept Mr. Reveley's imputation that my article failed to recognize that Baird was 'a very fine man indeed'. I thought I made it clear that, in my opinion, he was more sinned against than sinning. He was not, and no criticism is implied in saying so, the type to win rat-races; perhaps that is why he came in last. It is the end of the story that deserves the association with a whimper. Baird himself was as brave as he was persistent but was, nevertheless, misguided in paying too much attention to publicity and too little to the imperatives of technology.

Demonstrations of loyalty are always welcome and I respect Mr. Reveley for his. I trust he will realize that there are other loyalties of a less personal kind and that devotion to objectivity is one of them.]

Flux cutting or flux linking

Dear Sir—I cannot agree with Mr. J. D. Martin's treatment of the induced-e.m.f. problem (June 1962 *Journal*, p. 296).

The expression:

$$\boldsymbol{E} = \boldsymbol{u} \times \boldsymbol{B} \quad . \quad . \quad . \quad (1)$$

is the Lorentz equation for the force on a unit charge moving with velocity $\boldsymbol{u}$ in a magnetic field $\boldsymbol{B}$. The equation can be applied to the free charge in a conductor moving with velocity $\boldsymbol{u}$ normal to its length; if the field is uniform, integration along a length l of the conductor yields the usual expression for induced e.m.f., namely:

$$e = \int \boldsymbol{E}.\mathrm{d}\boldsymbol{l} = Blu \sin \theta \quad . \quad . \quad (2)$$

Much confusion about flux cutting and flux linking arises from a failure to distinguish between stationary systems and systems in relative motion. Maxwell's formulation of the field equations is only valid for the former, and in this case Faraday's law should be written:

$$\oint \boldsymbol{E}.\mathrm{d}\boldsymbol{l} = -\frac{\partial}{\partial t}\iint_S \boldsymbol{B}.\mathrm{d}\boldsymbol{S} \qquad (3)$$

The right-hand side of eqn. (3) signifies that the flux of the variable vector $\boldsymbol{B}$ is to be evaluated over a surface S spanning a *fixed* contour and the time derivative of this flux taken. Since the contour is fixed, the equation does not apply to systems in relative motion.